

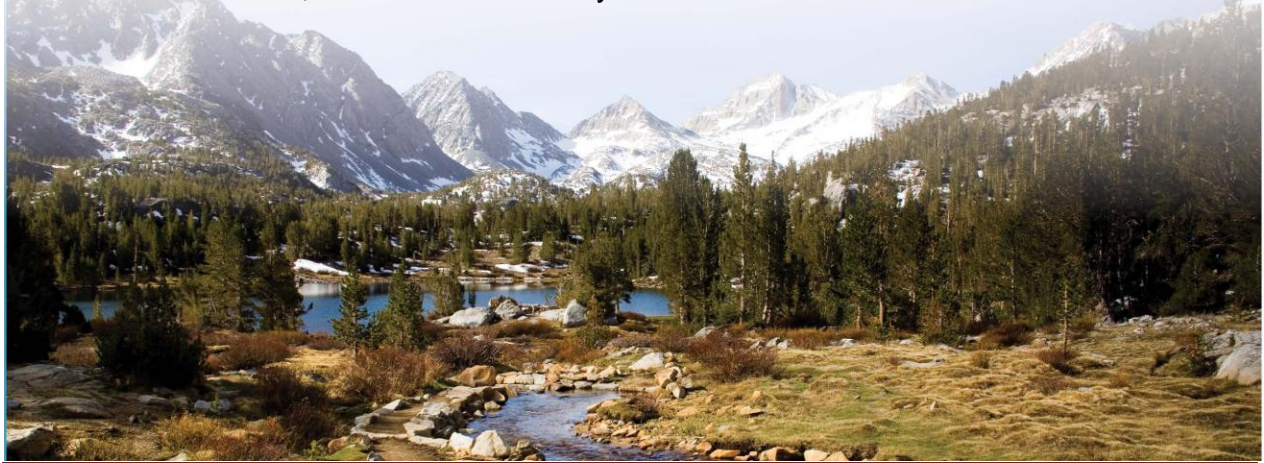
Section 6: Water Supply Reliability

Under the California Urban Water Management Planning Act (Act), all Urban Water Management Plans (UWMPs) must include an assessment of the reliability of their water supplies. The water supply and demand assessment must compare the total projected water use with the projected water supply, in 5-year increments, through the next 20 years. This section presents a comparison of the water demands and supplies within the Vallecitos Water District's (VWD's) service area, and assesses supply versus demand during normal years, single dry water years, and multiple dry water years.

VWD imports 100 percent of its potable water supply from the San Diego County Water Authority (SDCWA). Though VWD is guided by its 2008 Water, Wastewater and Recycled Water Master Plan (2008 Master Plan) to assure future reliable water supplies, it is dependent on the water supply abilities of its wholesaler, the SDCWA. According to the SDCWA's 2010 UWMP, the SDCWA anticipates meeting all future demands of its member agencies in normal and single dry-year scenarios. However, some level of shortage could potentially be experienced during the multiple dry-year scenarios. Strategies to address these deficiencies, including SDCWA's Carryover Storage Program and Dry-Year Transfer Program, are discussed in Section 9.

6.1 Normal Water Year Assessment

Table 6-1 shows the normal year assessment comparing the 2008 Master Plan projected water demands for VWD through the year 2030 with the target demands necessary to meet Senate Bill X₇₋₇ (SB7) supply objectives. Please note that VWD's actual capita daily water use for the fiscal year ending in 2010 is 154.6 gpcd, which is already below the 2020 target. And although the 2008 Master Plan projects significant increases in demand, these estimates may not reflect actual demands at those times.



The “SB X₇₋₇ Compliant Supply” quantities given in Table 6-1 are consistent with VWD’s per capita daily water use targets for the years 2015, 2020, 2025 and 2030. In order to meet SB7 supply objectives, the demand projections given in the 2008 Master Plan must be reduced with additional conservation by 19.3 percent in 2015, 32.9 percent in 2020, 33.6 percent in 2025, and 35.6 percent in 2030.

Table 6-1: Normal Year Water Assessment

| | 2015 ¹ | 2020 ¹ | 2025 ¹ | 2030 ¹ |
|--|-------------------|-------------------|-------------------|-------------------|
| Demand from the 2008 Master Plan² | 24,200,000 | 26,900,000 | 29,100,000 | 31,200,000 |
| SB X₇₋₇ Compliant Supply³ | 17,204,622 | 15,580,837 | 16,761,852 | 17,449,216 |
| Agricultural Water² | 1,126,398 | 1,115,252 | 1,104,106 | 1,092,960 |
| Unaccounted/Unbilled Water Losses² | 1,210,000 | 1,345,000 | 1,455,000 | 1,560,000 |
| Total Supply from SDCWA⁴ | 19,541,020 | 18,041,089 | 19,320,958 | 20,102,176 |
| Additional Conservation Required⁵ | 4,658,980 | 8,858,911 | 9,779,042 | 11,097,824 |

¹In units of gallons per day
²As given in Tables 2-6 and 2-7 (see Section 2)
³Equals the VWD target per capita water usage * the population in VWD’s service area (see Section 3)
⁴Equals the sum of the SB X₇₋₇ Compliant Supply, Agricultural Water and Unaccounted Water Losses
⁵Equals the difference of the Demand from the 2008 Master Plan and the Total Supply from SDCWA

6.2 Dry Water Year Assessment

In addition to a normal water-year, an assessment is required to compare the total water supply available to VWD with the total projected water use under single dry year and multiple dry years over the next 20 years, in 5-year increments. The SDCWA’s assessment includes existing and planned supplies from the Imperial Irrigation District transfer, canal lining projects and seawater desalination, which are considered “drought-proof” supplies. With the previous years leading up to the single dry-year being wet or average hydrologic conditions, MWD



Artist rendering of the proposed SDCWA seawater desalination project in Carlsbad, CA

should have adequate supplies in storage to cover potential shortfalls in core supplies to its member agencies. Therefore, there would be no reason for allocation.

SDCWA estimated dry-year demands in 5-year increments from 2015 through 2030. According to models used during preparation of the SDCWA's 2010 UWMP, water demand is expected to increase in the dry years above normal-year demands by 5.9 percent in 2015, by 6.0 percent in 2020, by 6.8 percent in 2025, and by 7.1 percent in 2030.

Table 6-2 shows VWD's single dry-year assessment in five-year increments through the year 2030. The "SB X₇₋₇ Compliant Supply" figures in this table were increased by the percentages given in the above paragraph from the "SB X₇₋₇ Compliant Supply" figures given in Table 6-1.

Table 6-2: Single Dry Year Water Assessment

| | 2015 ¹ | 2020 ¹ | 2025 ¹ | 2030 ¹ |
|--|-------------------|-------------------|-------------------|-------------------|
| SB X₇₋₇ Compliant Supply² | 18,212,670 | 16,521,399 | 17,907,476 | 18,680,570 |
| Agricultural Water³ | 1,126,398 | 1,115,252 | 1,104,106 | 1,092,960 |
| Unaccounted/Unbilled Water Losses³ | 1,210,000 | 1,345,000 | 1,455,000 | 1,560,000 |
| Total Supply from SDCWA⁴ | 20,549,068 | 18,981,651 | 20,466,582 | 21,333,530 |
| ¹ In units of gallons per day | | | | |
| ² From Table 6-1 plus the single dry-year supply increase over normal year supply per the SDCWA | | | | |
| ³ As given in Tables 2-6 and 2-7 (see Section 2) | | | | |
| ⁴ Equals the sum of the SB X ₇₋₇ Compliant Supply, Agricultural Water and Unaccounted Water Losses | | | | |

If MWD, SDCWA and VWD supplies are developed as planned, along with achievement of SB7 retail conservation targets, then no shortages are anticipated within VWD's service area in a single dry-year through 2030.

Similar to the single dry-year assessment, SDCWA estimated multiple dry-year demands in 5-year increments from 2015 through 2030. According to models used during preparation of the SDCWA's 2010 UWMP, water demand is expected to increase in the dry years above normal-year demands as follows:

- 4.3 percent in 2016
- 6.7 percent in 2017
- 10.3 percent in 2018
- 5.6 percent in 2021
- 7.9 percent in 2022

- 11.3 percent in 2023
- 6.2 percent in 2026
- 8.7 percent in 2027
- 12.4 percent in 2028
- 6.3 percent in 2031
- 9.1 percent in 2032
- 12.5 percent in 2033

Table 6-3 shows VWD's multiple dry year water year assessments in 5-year increments through the year 2030.

Table 6-3: Multiple Dry Year Water Assessment

| | | 2015 ¹ | 2020 ¹ | 2025 ¹ | 2030 ¹ |
|--|--|-------------------|-------------------|-------------------|-------------------|
| Multiple-dry year first year supply | SB X₇₋₇ Compliant Supply² | 17,609,973 | 16,703,354 | 17,943,139 | 18,629,942 |
| | Agricultural Water³ | 1,126,398 | 1,115,252 | 1,104,106 | 1,092,960 |
| | Unaccounted/Unbilled Water Losses³ | 1,210,000 | 1,345,000 | 1,455,000 | 1,560,000 |
| | Total Supply from SDCWA⁴ | 19,946,371 | 19,163,606 | 20,502,245 | 21,282,902 |
| Multiple-dry year second year supply | SB X₇₋₇ Compliant Supply² | 17,660,040 | 17,323,587 | 18,510,740 | 19,188,432 |
| | Agricultural Water³ | 1,126,398 | 1,115,252 | 1,104,106 | 1,092,960 |
| | Unaccounted/Unbilled Water Losses³ | 1,210,000 | 1,345,000 | 1,455,000 | 1,560,000 |
| | Total Supply from SDCWA⁴ | 19,996,438 | 19,783,839 | 21,069,846 | 21,841,392 |
| Multiple-dry year third year supply | SB X₇₋₇ Compliant Supply² | 17,905,252 | 18,129,777 | 19,304,542 | 19,863,137 |
| | Agricultural Water³ | 1,126,398 | 1,115,252 | 1,104,106 | 1,092,960 |
| | Unaccounted/Unbilled Water Losses³ | 1,210,000 | 1,345,000 | 1,455,000 | 1,560,000 |
| | Total Supply from SDCWA⁴ | 20,241,650 | 20,590,029 | 21,863,648 | 22,516,097 |
| ¹ In units of gallons per day | | | | | |
| ² From Table 6-1 plus the multiple dry-year supply increase over normal year supply per the SDCWA | | | | | |
| ³ As given in Tables 2-6 and 2-7 (see Section 2) | | | | | |
| ⁴ Equals the sum of the SB X ₇₋₇ Compliant Supply, Agricultural Water and Unaccounted Water Losses | | | | | |

The SDCWA's assessment of its water supply reliability showed that it would meet demands under single dry conditions through the year 2035. However, as shown in Tables 9-3 through 9-6 of the Water Authority's 2010 UWMP under multiple dry year conditions, these tables present potential water supply shortages of varying degrees over the 25-year planning horizon. If these shortfalls occur as projected, additional conservation measures will be necessary to balance supply against the regional demands in the SDCWA's service area. Section 9.5 of the SDCWA's 2010 UWMP describes its additional planned supply projects.

VWD continues to work closely with the SDCWA and MWD for future water supply planning. These agencies have determined that they will be able to meet their projected demands through 2035, which include potable water demands for VWD. Based on the information provided by MWD and the SDCWA, the water supply available to VWD is considered to be reliable.

If MWD, SDCWA and VWD supplies are developed as planned, along with achievement of SB7 retail conservation targets, then no shortages are anticipated within VWD's service area in multiple dry-year events through 2030.